PATENT

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

Application No.	10/611,333	Confirmation No.	3763
Applicant:	Joseph Odenwalder et al.		
Title:	Code Division Multiplexing Commands on a Code Division Multiplexed Channel		
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AMENDMENT AND RESPONSE TO FINAL OFFICE ACTION

Commissioner for Patents
P.O. Box 1450
Alexandria, VA 22313-1450

Dear Sir:

The Final Office Action dated August 31, 2010, has been carefully considered. Since the present Amendment is being submitted within two months of the Final Office Action, an Advisory is respectfully requested. Claims 1, 2, 4-30 and 32-44 are active and pending in the present application. Further examination and reconsideration of the rejections of the pending claims are respectfully requested. Prior to examination of the above-identified application, please amend the claims as indicated in the pending claims.

Pending Claims begin on page 2.

Remarks begin on page 21.

PENDING CLAIMS

This listing of claims will replace all prior versions and listings of claims in the application.

1. (Currently Amended) An apparatus, comprising:

a first Hadamard encoder for receiving a plurality of symbol streams for respective ones of a plurality of mobile stations and encoding each of the symbol streams with one of a plurality of covering sequences with pattern repetition to form a plurality of covered streams, wherein each of the plurality of covering sequences is based on a remote station identifier;

a summer for summing less than all of the plurality of covered streams to form a first Code Division Multiplexed (CDM) signal; and

a second encoder for covering the first CDM signal with an I and Q Walsh covering sequence to form a first covered CDM signal.

2. (Previously Presented) The apparatus of claim 1, further comprising one or more channel gain blocks for receiving a plurality of gain values and multiplying the plurality of covered streams by the plurality of gain values, respectively, prior to delivery to the summer.

3. (Canceled)

4. (Original) The apparatus of claim 1, further comprising a transmitter for receiving the first covered CDM signal and one or more additional covered signals,

combining the first covered CDM signal and the one or more additional covered signals to form a combined CDM signal, and transmitting the combined CDM signal to a remote station.

5. (Previously Presented) The apparatus of claim 1, further comprising:

a third Hadamard encoder for receiving a second plurality of symbol streams and encoding each of the symbol streams with the plurality of covering sequences with pattern repetition to form a second plurality of covered streams;

a second summer for summing the second plurality of covered streams to form a second Code Division Multiplexed (CDM) signal;

a fourth encoder for covering the second CDM signal with a second I and Q Walsh covering sequence to form a second covered CDM signal; and

a transmitter for transmitting the first covered CDM signal on an in-phase channel and the second covered CDM signal on a quadrature channel.

6. (Original) The apparatus of claim 1, wherein one or more of the plurality of symbol streams comprises command values, the command values indicating acknowledgement, negative acknowledgement, or acknowledge and continue.

7. (Previously Presented) The apparatus of claim 1, wherein the first Hadamard encoder segments the encoding time into two or more segments and covers each of the plurality of symbol streams with two or more sequences with pattern repetition, each sequence for covering during the two or more segments, respectively, and the sequence

covering each symbol stream during a segment being unique to the respective symbol stream.

8. (Currently Amended) The apparatus of claim 7, wherein a first sequence is selected as a Hadamard sequence corresponding to a first remote station identifier, and a second sequence is selected as a second remote station identifier plus five modulo half the number of symbol streams in the plurality.

9. (Currently Amended) The apparatus of claim 7, wherein a first sequence is selected as a Hadamard sequence corresponding to a first remote station identifier, and a second sequence is selected as a second remote station identifier plus seven modulo half the number of symbol streams in the plurality.

10. (Previously Presented) The apparatus of claim 7, wherein each sequence is assigned in a time varying manner.

11. (Currently Amended) An apparatus, comprising:

a plurality of CDM encoders for receiving a plurality of symbol streams and producing a plurality of covered CDM signals, each CDM encoder comprising:

a first Hadamard encoder for receiving the plurality of symbol streams and encoding each of the symbol streams with one of a plurality of covering sequences with pattern repetition to form a plurality of covered streams, wherein each of the plurality of covering sequences is based on a remote station identifier;

a summer for summing the plurality of covered streams to form a CDM signal;

a time multiplexer for receiving the plurality of covered CDM signals and forming a Time Division Multiplexed (TDM) signal comprising the plurality of covered CDM signals; and

a second encoder for covering the TDM signal with an I and Q Walsh covering sequence to form a covered TDM/CDM signal configured for transmission in CDM fashion.

12. (Previously Presented) The apparatus of claim 1l, wherein each CDM encoder further comprises one or more channel gain blocks for receiving a plurality of gain values and multiplying the plurality of covered streams by the plurality of gain values, respectively, prior to delivery to the summer.

13. (Original) The apparatus of claim 11, further comprising a transmitter for receiving the covered TDM/CDM signal and one or more additional covered signals, combining the covered TDM/CDM signal and one or more additional covered signals to form a combined CDM signal, and transmitting the combined CDM signal to a remote station.

14. (Currently Amended) An apparatus, operable with a CDM signal, covered with a first I and Q Walsh covering sequence, comprising two or more sub-CDM signals, each of the two or more sub-CDM signals comprising a plurality of symbol sequences for reception by respective ones of a plurality of mobile stations covered by a second

plurality of covering sequences with pattern repetition, respectively, the apparatus comprising:

a receiver for receiving the CDM signal;

a first despreader for despreading the received CDM signal with the first I and Q Walsh covering sequence to produce a despread CDM signal;

a second Hadamard despreader for despreading the despread CDM signal with one of the second plurality of covering sequences with pattern repetition to produce a recovered symbol sequence for a respective one of the plurality of mobile stations, wherein each of the second plurality of covering sequences is based on a remote station identifier.

15. (Previously Presented) The apparatus of claim 14, wherein the second Hadamard despreader further despreads the despread CDM signal with one or more additional second covering sequences with pattern repetition to produce one or more additional recovered symbol sequences.

16. (Currently Amended) An apparatus, operable with a CDM signal, covered with a first I and Q Walsh covering sequence, comprising one or more TDM signals, each of the one or more TDM signals comprising one or more sub-CDM signals, each of the one or more sub-CDM signals comprising a plurality of symbol sequences covered by a second plurality of covering sequences with pattern repetition, respectively, the apparatus comprising:

a receiver for receiving the CDM signal;

a first despreader for despreading the received CDM signal with the first I and Q Walsh covering sequence to produce a despread CDM signal;

a demultiplexer for selecting one of the TDM signals from the despread CDM signal; and

a second Hadamard despreader for despreading the selected TDM signal with one of the second plurality of covering sequences with pattern repetition to produce a recovered symbol sequence, wherein each of the second plurality of covering sequences is based on a remote station identifier.

17. (Currently Amended) A wireless communication device, comprising:

a first Hadamard encoder for receiving a plurality of symbol streams for respective ones of a plurality of mobile stations and encoding each of the symbol streams with one of a plurality of covering sequences with pattern repetition to form a plurality of covered streams, wherein each of the plurality of covering sequences is based on a remote station identifier;

a summer for summing the plurality of covered streams to form a first Code Division Multiplexed (CDM) signal; and

a second encoder for covering the first CDM signal with an I and Q Walsh covering sequence to form a first covered CDM signal.

18. (Currently Amended) A wireless communication device, comprising:

a plurality of CDM encoders for receiving a plurality of symbol streams and producing a plurality of covered CDM signals, each CDM encoder comprising:

a first Hadamard encoder for receiving the plurality of symbol streams and encoding each of the symbol streams with one of a plurality of covering sequences with pattern repetition to form a plurality of covered streams, wherein each of the plurality of covering sequences is based on a remote station identifier;

a summer for summing the plurality of covered streams to form a CDM signal;

a time multiplexer for receiving the plurality of covered CDM signals and forming a Time Division Multiplexed (TDM) signal comprising the plurality of covered CDM signals; and

a second encoder for covering the TDM signal with an I and Q Walsh covering sequence to form a covered TDM/CDM signal configured for transmission in CDM fashion.

19. (Currently Amended) A wireless communication device, operable with a CDM signal, covered with a first I and Q Walsh covering sequence, comprising two or more sub-CDM signals, each of the two or more sub-CDM signals comprising a plurality of symbol sequences for reception by respective ones of a plurality of mobile stations covered by a second plurality of covering sequences with pattern repetition, respectively, the wireless device comprising:

a receiver for receiving the CDM signal;

a first despreader for despreading the received CDM signal with the first I and Q Walsh covering sequence to produce a despread CDM signal;

a second Hadamard despreader for despreading the despread CDM signal with one of the second plurality of covering sequences with pattern repetition to produce a

recovered symbol sequence for a respective one of the plurality of mobile stations, wherein each of the second plurality of covering sequences is based on a remote station identifier.

20. (Currently Amended) A wireless communication device, operable with a CDM signal, covered with a first I and Q Walsh covering sequence, comprising one or more TDM signals, each of the one or more TDM signals comprising one or more sub-CDM signals, each of the one or more sub-CDM signals comprising a plurality of symbol sequences covered by a second plurality of covering sequences with pattern repetition, respectively, the apparatus comprising:

a receiver for receiving the CDM signal;

a first despreader for despreading the received CDM signal with the first I and Q Walsh covering sequence to produce a despread CDM. signal;

a demultiplexer for selecting one of the TDM signals from the despread CDM signal; and

a second Hadamard despreader for despreading the selected TDM signal with one of the second plurality of covering sequences with pattern repetition to produce a recovered symbol sequence, wherein each of the second plurality of covering sequences is based on a remote station identifier.

21. (Currently Amended) A wireless communication system, including a first wireless communication device comprising:

a first Hadamard encoder for receiving a plurality of symbol streams for respective ones of a plurality of mobile stations and encoding each of the symbol streams with one of a plurality of covering sequences with pattern repetition to form a plurality of covered streams, wherein each of the plurality of covering sequences is based on a remote station identifier;

a summer for summing less than all of the plurality of covered streams to form a first Code Division Multiplexed (CDM) signal; and

a second encoder for covering the first CDM signal with an I and Q Walsh covering sequence to form a first covered CDM signal.

22. (Previously Presented) The wireless communication system of claim 21, further comprising a second wireless communication device comprising:

a receiver for receiving the first covered CDM signal;

a first despreader for despreading the received CDM signal with the first I and Q Walsh covering sequence to produce a despread CDM signal; and

a second Hadamard despreader for despreading the despread CDM signal with one of the second covering sequences with pattern repetition to produce a recovered symbol sequence.

23. (Currently Amended) A wireless communication system, including a wireless communication device comprising:

a plurality of CDM encoders for receiving a plurality of symbol streams and producing a plurality of covered CDM signals, each CDM encoder comprising:

a first Hadamard encoder for receiving the plurality of symbol streams and encoding each of the symbol streams with one of a plurality of covering sequences with pattern repetition to form a plurality of covered streams, wherein each of the plurality of covering sequences is based on a remote station identifier;

a summer for summing the plurality of covered streams to form a CDM signal;

a time multiplexer for receiving the plurality of covered CDM signals and forming a Time Division Multiplexed (TDM) signal comprising the plurality of covered CDM signals; and

a second encoder for covering the TDM signal with an I and Q Walsh covering sequence to form a covered TDM/CDM signal configured for transmission in CDM fashion.

24. (Previously Presented) The wireless communication system of claim 23, further comprising a second wireless communication device comprising:

a receiver for receiving the TDM/CDM signal;

a first despreader for despreading the received TDM/CDM signal with the first I and Q Walsh covering sequence to produce a despread CDM signal;

a demultiplexer for selecting one of the TDM signals from the despread CDM signal; and

a second Hadamard despreader for despreading the selected TDM signal with one of the second covering sequences with pattern repetition to produce a recovered symbol sequence.

25. (Currently Amended) A method of multiplexing plurality of symbol streams, comprising:

Hadamard covering each of a plurality of symbol streams for respective ones of a plurality of mobile stations with one of a plurality of covering sequences with pattern repetition to form a plurality of covered streams, wherein each of the plurality of covering sequences is based on a remote station identifier;

summing less than all of the plurality of covered streams to form a first CDM signal; and

covering the first CDM signal with an I and Q Walsh covering sequence to form a first covered CDM signal.

26. (Previously Presented) The method of claim 25, further comprising multiplying the plurality of covered streams by a plurality of gain values, respectively, prior to summing.

27. (Original) The method of claim 25, further comprising:

combining the first covered CDM signal and one or more additional covered signals; and

transmitting the combined signals to one or more remote stations.

28. (Previously Presented) The method of claim 25, further comprising:

Hadamard covering each of a second plurality of symbol streams with one of the plurality of covering sequences with pattern repetition to form a second plurality of covered streams;

summing the second plurality of covered streams to form a second CDM signal;

covering the second CDM signal with a second I and Q Walsh covering sequence to form a second covered CDM signal;

transmitting the first covered CDM signal on an in-phase channel; and

transmitting the second covered CDM signal on a quadrature channel.

29. (Original) The method of claim 25, wherein one or more of the plurality of symbol streams comprises command values, the command values indicating acknowledgment, negative acknowledgment, or acknowledge and continue.

30. (Previously Presented) The method of claim 25, wherein the covering of each of the plurality of symbol streams comprises:

segmenting the encoding time into two or more segments;

Hadamard covering each of the plurality of symbol streams with two or more sequences with pattern repetition, each sequence for covering during the two or more segments, respectively, and the sequence covering each symbol stream during a segment being unique to the respective symbol stream.

31. (Canceled)

32. (Original) The method of claim 30, wherein the two or more sequences are assigned in a time varying manner.

33. (Currently Amended) A method of multiplexing plurality of symbol streams, comprising:

Hadamard covering each of a plurality of symbol streams with one of a plurality of covering sequences with pattern repetition to form a plurality of covered streams, wherein each of the plurality of covering sequences is based on a remote station identifier;

summing subsets of the plurality of covered streams to form a plurality of CDM signals;

time division multiplexing the plurality of CDM signals to form a TDM signal; and

covering the first TDM signal with an I and Q Walsh covering sequence to form a covered TDM/CDM signal configured for transmission in CDM fashion.

34. (Original) The method of claim 33, further comprising:

combining the first covered TDM/CDM signal and one or more additional covered signals; and

transmitting the combined signals to one or more remote stations.

35. (Currently Amended) A method of decoding a symbol sequence, comprising:

receiving a CDM signal, covered with a first I and Q Walsh covering sequence, comprising two or more sub-CDM signals, each of the two or more sub-CDM signals comprising a plurality of symbol sequences for reception by respective ones of a plurality of mobile stations covered by a second plurality of covering sequences with pattern repetition, respectively;

despreading the received CDM signal with the first I and Q Walsh covering sequence;

Hadamard despreading the despread received CDM signal with one of the second plurality of covering sequences with pattern repetition to produce a decoded symbol sequence for a respective one of the plurality of mobile stations, wherein each of the second plurality of covering sequences is based on a remote station identifier.

36. (Currently Amended) A method of decoding a symbol sequence, comprising:

receiving a CDM signal;

despreading the received CDM signal with a first I and Q Walsh covering sequence;

time demultiplexing the despread received CDM signal to select a TDM signal; and

Hadamard despreading the selected TDM signal with a second covering sequence with pattern repetition to produce a decoded symbol sequence, wherein the second covering sequence is based on a remote station identifier.

37. (Currently Amended) An apparatus, comprising:

means for Hadamard covering each of a plurality of symbol streams for respective ones of a plurality of mobile stations with one of a plurality of covering sequences with pattern repetition to form a plurality of covered streams, wherein each of the plurality of covering sequences is based on a remote station identifier;

means for summing less than all of the plurality of covered streams to form a first CDM signal; and

means for covering the first CDM signal with an I and Q Walsh covering sequence to form a first covered CDM signal.

38. (Currently Amended) An apparatus, comprising:

means for Hadamard covering each of a plurality of symbol streams with one of a plurality of covering sequences with pattern repetition to form a plurality of covered streams, wherein each of the plurality of covering sequences is based on a remote station identifier;

means for summing subsets of the plurality of covered streams to form a plurality of CDM signals;

means for time division multiplexing the plurality of CDM signals to form a TDM signal; and

means for covering the first TDM signal with an I and Q Walsh covering sequence to form a covered TDM/CDM signal configured for transmission in CDM fashion.

39. (Currently Amended) An apparatus, comprising:

means for receiving a CDM signal, covered with a first I and Q Walsh covering sequence, comprising two or more sub-CDM signals, each of the two or more sub-CDM signals comprising a plurality of symbol sequences for reception by respective ones of a plurality of mobile stations covered by a second plurality of covering sequences with pattern repetition, respectively;

means for despreading the received CDM signal with the first I and Q Walsh covering sequence; and

means for Hadamard despreading the despread received CDM signal with one of the second plurality of covering sequences with pattern repetition to produce a decoded symbol sequence for a respective one of the plurality of mobile stations, wherein each of the second plurality of covering sequences is based on a remote station identifier.

40. (Currently Amended) An apparatus, comprising:

means for receiving a CDM signal;

means for despreading the received CDM signal with a first I and Q Walsh covering sequence;

means for time demultiplexing the despread received CDM signal to select a TDM signal; and

means for Hadamard despreading the selected TDM signal with a second covering sequence with pattern repetition to produce a decoded symbol sequence, wherein the second covering sequence is based on a remote station identifier.

41. (Currently Amended) Processor readable media, operable to perform the following steps:

Hadamard covering each of a plurality of symbol streams for respective ones of a plurality of mobile stations with one of a plurality of covering sequences with pattern repetition to form a plurality of covered streams, wherein each of the plurality of covering sequences is based on a remote station identifier;

summing less than all of the plurality of covered streams to form a first CDM signal; and

covering the first CDM signal with an I and Q Walsh covering sequence to form a first covered CDM signal.

42. (Currently Amended) Processor readable media, operable to perform the following steps:

Hadamard covering each of a plurality of symbol streams with one of a plurality of covering sequences with pattern repetition to form a plurality of covered streams, wherein each of the plurality of covering sequences is based on a remote station identifier;

summing subsets of the plurality of covered streams to form a plurality of CDM signals;

time division multiplexing the plurality of CDM signals to form a TDM signal; and

covering the first TDM signal with an I and Q Walsh covering sequence to form a covered TDM/CDM signal configured for transmission in CDM fashion.

43. (Currently Amended) Processor readable media, operable to perform the following steps:

receiving a CDM signal, covered with a first I and Q Walsh covering sequence, comprising two or more sub-CDM signals, each of the two or more sub-CDM signals comprising a plurality of symbol sequences for reception by respective ones of a plurality of mobile stations covered by a second plurality of covering sequences with pattern repetition, respectively;

despreading the received CDM signal with the first I and Q Walsh covering sequence;

Hadamard despreading the despread received CDM signal with one of the second plurality of covering sequences with pattern repetition to produce a decoded symbol sequence for a respective one of the plurality of mobile stations, wherein each of the second plurality of covering sequences is based on a remote station identifier.

44. (Currently Amended) Processor readable media, operable to perform the following steps:

receiving a CDM signal;

despreading the received CDM signal with a first I and Q Walsh covering sequence;

time demultiplexing the despread received CDM signal to select a TDM signal; and

Hadamard despreading the selected TDM signal with a second covering sequence with pattern repetition to produce a decoded symbol sequence, wherein the second covering sequence is based on a remote station identifier.

REMARKS

Claims 1-2, 4-30 and 32-44 are pending in the present application. The rejections under 35 U.S.C. 103 are respectfully traversed. However, in order to further the prosecution of this application, the pending claims have been amended in order to further distinguish them from the cited art. Support for the claim amendments can be found in the specification and drawings, in particular in paragraph 0118 of US 2004/0160933 (published version of the present application). No new matter has been added. Applicants believe that the present application as amended is now in condition for allowance of which prompt and favorable action is respectfully requested.

35 U.S. C. 103 Rejection

Claims 1, 2, 4, 5, 7, 10, 14, 15 17, 19, 21, 22, 25-28, 30, 32, 35, 37, 39, 41 and 43 were rejected under 35 U.S.C. 103(a) as being unpatentable over Tiedemann, Jr. et al. (USPN 5,914,950) in view of Agrawal et al. (USPN 6,134,215). Claims 6 and 29 were rejected under 35 U.S.C. 103(a) as being unpatentable over Tiedemann (USPN 5,914,950) and Agrawal (USPN 6,134,215) in view of Kanterakis et al. (USPN 6,389,056). Claims 11, 13, 16, 18, 20, 23, 24, 33, 34, 36, 38, 40, 42 and 44 were rejected under 35 U.S.C. 103(a) as being unpatentable over Schilling et al. (USPN 6,061,359) in view of Agrawal (USPN 6,134,215). Claim 12 is rejected under 35 U.S.C. 103(a) as being unpatentable over Schilling (USPN 6,061,359) and Agrawal (USPN 6,134,215) in view of Tiedemann (USPN 5,914,950).

The MPEP recited the standard to be applied in an issue of obviousness under 35 USC 103. Section 2143.03 of the MPEP states in part:

ALL CLAIM LIMITATIONS MUST BE CONSIDERED

> "All words in a claim must be considered in judging the patentability of that claim against the prior art." *In re Wilson*, 424 F.2d 1382, 1385, 165 USPQ 494, 496 (CCPA 1970). If an independent claim is nonobvious under 35 U.S.C. 103, then any claim depending therefrom is nonobvious. *In re Fine*, 837 F.2d 1071, 5 USPQ2d 1596 (Fed. Cir. 1988).

The factual inquiries that are relevant in the determination of obviousness are determining the scope and contents of the prior art, ascertaining the differences between the prior art and the claims in issue, resolving the level of ordinary skill in the art, and evaluating evidence of secondary consideration. KSR Int'l Co. v. Teleflex Inc., 550 U.S. 398, 2007 U.S. LEXIS 4745, at **4-5 (2007) (citing Graham v. John Deere Co. of Kansas City, 383 U.S. 1, 17-18 (1966)). To establish a *prima facie* case of obviousness, the prior art references "must teach or suggest all the claim limitations." M.P.E.P. § 2142. As the Board of Patent Appeals and Interferences has confirmed, "obviousness requires a suggestion of all limitations in a claim." In re Wada and Murphy, Appeal 2007-3733 (citing CFMT, Inc. v. Yieldup Intern. Corp., 349 F.3d 1333, 1342 (Fed. Cir. 2003)). Moreover, the analysis in support of an obviousness rejection "should be made explicit." KSR, 2007 U.S. LEXIS 4745, at **37. "[R]ejections on obviousness grounds cannot be sustained by mere conclusory statements; instead, there must be some articulated reasoning with some rational underpinning to support the legal conclusion of obviousness." Id. (citing In re Kahn, 441 F.3d 977, 988 (Fed. Cir. 2006)).

Independent claims 1, 11, 14, 16-21, 23, 25, 33 and 35-44 have been amended to recite the element of "wherein each of the plurality of covering sequences is based on a remote station identifier." Specification support for the claim amendment is found, for example, in paragraph 0118 of the present application (US 2004/0160933).

> "...In the example embodiment, the command streams are encoded using length-48 Hadamard sequence encoders, 610A-610N, respectively. The

Hadamard sequence number used in each encoder corresponds to the mobile identification number. However, the sequence assignment is arbitrary, and other configurations will be readily apparent to those of skill in the art. The outputs of Hadamard encoders 610A-610N may be individually gain controlled in channel gain blocks 630A-630N, respectively." *Present application (US 2004/0160933), paragraph 0118. Emphasis added.*

On page 3, the Office Action admits that "Tiedemann does not teach a Hadamard encoder." Thus, Tiedemann cannot disclose a Hadamard covering sequence that is based on a remote station identifier as recited in the amended claims.

On page 3, the Office Action states that "Agrawal teaches a Hadamard encoder [Col. 5, lines 18-27]." However, Agrawal does not disclose the recited element of "wherein each of the plurality of covering sequences is based on a remote station identifier." In contrast to a covering sequence based on a remote station identifier, Agrawal discloses a Walsh function of length 'n' (corresponding to the covering sequence) based on the repetitions and inversions of the 2×2 Hadamard matrix. There is no disclosure of the covering sequence being based on a remote station identifier. The cited portion of Agrawal (column 5, lines 1-57) is the entirety of the disclosure of Hadamard covering sequences in Agrawal. Thus, Agrawal does not disclose the element of "wherein each of the plurality of covering sequences is based on a remote station identifier."

"Therefore, the first two Hadamard matrices of orders 2 and 4 can be represented as:

$$H_2 = \begin{bmatrix} 1 & 1 \\ 1 & -1 \end{bmatrix} \text{ and}$$

$$H_4 = \begin{bmatrix} H_2 & H_2 \\ H_2 & \overline{H_2} \end{bmatrix} = \begin{bmatrix} 1 & 1 & 1 & 1 \\ 1 & -1 & 1 & -1 \\ 1 & 1 & -1 & -1 \\ 1 & -1 & -1 & 1 \end{bmatrix}$$

A Walsh function, W_n, then, is simply one of the rows of a Walsh function matrix (Hadamard matrix), and a Walsh function matrix of order 'n' is a square matrix containing n functions or sequences, each being n chips

(bits) in length." *Agrawal (US 6,134,215), col. 5, lines 28-43. Emphasis added.*

The Office Action, on page 13, admits that "Schilling does not teach a Hadamard encoder." Thus, Schilling cannot disclose a Hadamard covering sequence that is based on a remote station identifier as recited in the amended claims.

Kanterakis was cited on page 12 of the Office Action for disclosing that command values also indicate negative acknowledgement, or acknowledge and continue. Although Kanterakis discloses generic spreading sequences, there is no disclosure of a Hadamard covering sequence based on a remote station identifier, which is recited elements in the pending claims.

Thus, the cited references (Tiedemann, Schilling, Agrawal and Kanterakis), either taken separately or in combination, do not disclose, teach, suggest or make obvious all of the features of pending claims and the rejection should be withdrawn accordingly.

CONCLUSION

For the reasons stated above, the prior art references cited in the Office Action do not disclose, teach, suggest or make obvious the pending claims. Thus, Applicants respectfully request withdrawal of the 35 U.S.C.103 rejections based thereon.

ALLOWABLE SUBJECT MATTER

Applicants thank the Examiner for indicating the allowability of claims 8 and 9. As the amendments made herein are believed to resolve the outstanding rejections of the pending claims, all the pending claims are now believed to be allowable.

REQUEST FOR ALLOWANCE

In view of the foregoing, Applicants submit that all pending claims in the application are patentable. Accordingly, reconsideration and allowance of this application are earnestly solicited. Applicants do not believe that any fees are due regarding this amendment. However, if any fees are required, please charge Deposit Account No. 17-0026. Applicants encourage the Examiner to telephone the Applicants' attorney should any issues remain.

Respectfully submitted,

Dated: October 22, 2010

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